2010

Test 1967: John Deere 8245R

Nebraska Tractor Test Laboratory
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NEBRASKA OECD TRACTOR TEST 1967–SUMMARY 728
JOHN DEERE 8245R DIESEL
16 SPEED

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832

Dates of tests: April 8 - 30, 2010

Manufacturer: John Deere Tractor Works, 3500 East Donald St., P.O. Box 270, Waterloo Ia, 50704-0270

FUEL, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.8433 **Fuel weight** 7.022 lbs/gal *(0.842 kg/l)* **Oil SAE** 15W-40 **API service classification** CI-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard fluid **Front axle lubricant** John Deere Hy-Gard fluid **Total time engine was operated:** 32.0 hours

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and air to air aftercooler **Serial No.***RG6090L069558* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.661" x 5.354" *(118.4 mm x 136.0 mm)* **Compression ratio** 16.3 to 1 **Displacement** 548 cu in *(8984 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element and water separator **Fuel cooler** radiator for pump return fuel **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 78.7 - 85.1 lb/h *(35.7 - 38.6 kg/h)* **High idle:** 2175 - 2225 rpm **Turbo boost:** nominal 21.0 - 25.4 psi *(145 - 175 kPa)* as measured 22.2 psi *(153 kPa)*

CHASSIS: Type front wheel assist **Serial No.***1RW8245RT9P003399* **Tread width** rear 60.0" *(1524 mm)* to 132.5" *(3368 mm)* front 60.0" *(1524 mm)* to 88.0" *(2235 mm)* **Wheelbase** 118.9" *(3020 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled power shift **Nominal travel speeds mph *(km/h)*** first 1.12 *(1.81)* second 1.51 *(2.43)* third 2.01 *(3.24)* fourth 2.69 *(4.33)* fifth 3.02 *(4.86)* sixth 3.48 *(5.60)* seventh 4.05 *(6.51)* eighth 4.66 *(7.50)* ninth 5.39 *(8.67)* tenth 6.21 *(9.99)* eleventh 7.21 *(11.61)* twelfth 8.31 *(13.38)* thirteenth 9.80 *(15.77)* fourteenth 13.12 *(21.12)* fifteenth 17.47 *(28.12)* sixteenth 23.41*(37.67)* reverse 1.06 *(1.70)*, 2.83 *(4.55)*, 3.57 *(5.74)*, 6.55 *(10.54)*@1500 engine rpm **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 1000 rpm at 2004 engine rpm **Unladen tractor mass** 21655 lb *(9822 kg)*

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1048 rpm)					
208.55 *(155.52)*	2100	11.30 *(42.77)*	0.380 *(0.231)*	18.46 *(3.64)*	
Standard Power Take-off Speed(1000 rpm)					
224.84 *(167.66)*	2004	11.88 *(44.97)*	0.371 *(0.226)*	18.93 *(3.73)*	
Maximum Power (1 hour)					
234.79 *(175.08)*	1800	12.12 *(45.88)*	0.362 *(0.220)*	19.37 *(3.82)*	
VARYING POWER AND FUEL CONSUMPTION					
208.55 *(155.52)*	2100	11.30 *(42.77)*	0.380 *(0.231)*	18.46 *(3.64)*	Air temperature
181.70 *(135.49)*	2152	10.32 *(39.06)*	0.399 *(0.243)*	17.61 *(3.47)*	75°F *(24°C)*
137.05 *(102.20)*	2163	8.52 *(32.27)*	0.437 *(0.266)*	16.08 *(3.17)*	Relative humidity
91.92 *(68.55)*	2173	6.65 *(25.17)*	0.508 *(0.309)*	13.82 *(2.72)*	24%
46.23 *(34.48)*	2184	4.71 *(17.84)*	0.716 *(0.436)*	9.81 *(1.93)*	Barometer
1.64 *(1.23)*	2195	3.34 *(12.64)*	14.263 *(8.676)*	0.49 *(0.10)*	28.71" Hg *(97.22 kPa)*

Maximum torque - 759 lb.-ft. *(1029 Nm)* at 1401 rpm
Maximum torque rise - 45.4%
Torque rise at 1700 engine rpm - 38%
Power increase at 1800 rpm - 12.6%

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—8th Gear									
182.55 *(136.13)*	14908 *(66.32)*	4.59 *(7.39)*	2099	5.2	0.433 *(0.263)*	16.21 *(3.19)*	185 *(85)*	64 *(18)*	28.86 *(97.73)*
75% of Pull at Maximum Power—8th Gear									
142.57 *(106.31)*	11155 *(49.62)*	4.79 *(7.71)*	2155	3.5	0.475 *(0.289)*	14.80 *(2.92)*	185 *(85)*	74 *(23)*	28.88 *(97.80)*
50% of Pull at Maximum Power—8th Gear									
97.50 *(72.70)*	7475 *(33.25)*	4.89 *(7.87)*	2167	2.0	0.541 *(0.329)*	12.97 *(2.56)*	175 *(79)*	75 *(24)*	28.88 *(97.80)*
75% of Pull at Reduced Engine Speed—11th Gear									
142.37 *(106.17)*	11150 *(49.60)*	4.79 *(7.71)*	1391	3.5	0.402 *(0.245)*	17.45 *(3.44)*	178 *(81)*	74 *(23)*	28.88 *(97.80)*
50% of Pull at Reduced Engine Speed—11th Gear									
97.41 *(72.63)*	7444 *(33.11)*	4.91 *(7.89)*	1408	2.1	0.436 *(0.265)*	16.12 *(3.17)*	175 *(79)*	75 *(24)*	28.88 *(97.80)*

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED - 2100 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					6th Gear				
163.42 *(121.86)*	19350 *(86.07)*	3.17 *(5.10)*	2113	13.9	0.481 *(0.293)*	14.60 *(2.88)*	185 *(85)*	71 *(22)*	28.90 *(97.87)*
					7th Gear				
179.13 *(133.58)*	17232 *(76.65)*	3.90 *(6.27)*	2100	7.6	0.444 *(0.270)*	15.82 *(3.12)*	191 *(89)*	74 *(23)*	28.90 *(97.87)*
					8th Gear				
182.55 *(136.13)*	14908 *(66.32)*	4.59 *(7.39)*	2099	5.2	0.433 *(0.263)*	16.21 *(3.19)*	185 *(85)*	64 *(18)*	28.86 *(97.73)*
					9th Gear				
182.71 *(136.25)*	12809 *(56.98)*	5.35 *(8.61)*	2099	4.2	0.432 *(0.263)*	16.27 *(3.20)*	188 *(87)*	66 *(19)*	28.87 *(97.77)*
					10th Gear				
182.41 *(136.02)*	10982 *(48.85)*	6.23 *(10.03)*	2099	3.2	0.433 *(0.264)*	16.21 *(3.19)*	189 *(87)*	68 *(20)*	28.87 *(97.77)*
					11th Gear				
181.24 *(135.15)*	9350 *(41.59)*	7.27 *(11.70)*	2100	2.7	0.438 *(0.266)*	16.05 *(3.16)*	190 *(88)*	69 *(21)*	28.87 *(97.77)*
					12th Gear				
177.84 *(132.61)*	7914 *(35.20)*	8.43 *(13.56)*	2100	2.1	0.446 *(0.271)*	15.76 *(3.10)*	190 *(88)*	71 *(22)*	28.87 *(97.77)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 113°F*(45°C)*. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1967**, Nebraska Summary 728, July 27,2010.

Roger M. Hoy
Director

M.F. Kocher
D.R. Keshwani
J.A. Smith
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 8th gear	71.4	71.4
Transport speed - no load - 16th gear		74.0
Bystander in 16th gear		85.1

TIRES, BALLAST AND WEIGHT	With Ballast	Without Ballast
Rear Tires - No., size, ply & psi*(kPa)*	Four 480/80R46;***;14*(95)*	Two 480/80R46;***;19*(130)*
Ballast - Duals (total)	1770 lb *(803 kg)*	None
- Cast Iron (total)	3215 lb *(1458 kg)*	None
Front Tires - No., size, ply & psi*(kPa)*	Two 16.9R30;***;29*(200)*	Two 16.9R30;***;23*(160)*
Ballast - Liquid (total)	None	None
- Cast Iron (total)	875 lb *(397 kg)*	None
Height of Drawbar	19.0 in *(485 mm)*	18.0 in *(455 mm)*
Static Weight with operator - Rear	17250 lb *(7825 kg)*	12720 lb *(5770 kg)*
- Front	10440 lb *(4735 kg)*	9110 lb *(4132 kg)*
- Total	27690 lb*(12560 kg)*	21830 lb *(9902 kg)*

DRAWBAR PERFORMANCE
UNBALLASTED-FRONT DRIVE ENGAGED - 1800 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					6th Gear				
165.28 *(123.25)*	19469 *(86.60)*	3.18 *(5.12)*	2108	13.4	0.478 *(0.291)*	14.68 *(2.89)*	184 *(84)*	70 *(21)*	28.90 *(97.87)*
					7th Gear				
182.48 *(136.07)*	18372 *(81.72)*	3.73 *(5.99)*	2057	9.8	0.448 *(0.273)*	15.67 *(3.09)*	196 *(91)*	75 *(24)*	28.90 *(97.87)*
					8th Gear				
197.28 *(147.11)*	17613 *(78.34)*	4.20 *(6.76)*	1974	8.0	0.425 *(0.258)*	16.53 *(3.26)*	192 *(89)*	65 *(18)*	28.86 *(97.73)*
					9th Gear				
205.70 *(153.39)*	16392 *(72.91)*	4.71 *(7.57)*	1888	6.5	0.413 *(0.251)*	17.01 *(3.35)*	199 *(93)*	66 *(19)*	28.87 *(97.77)*
					10th Gear				
208.40 *(155.40)*	14961 *(66.55)*	5.22 *(8.40)*	1797	5.3	0.409 *(0.249)*	17.19 *(3.39)*	201 *(94)*	68 *(20)*	28.87 *(97.77)*
					11th Gear				
207.31 *(154.59)*	12630 *(56.18)*	6.16 *(9.91)*	1799	4.0	0.409 *(0.249)*	17.16 *(3.38)*	199 *(93)*	71 *(22)*	28.87 *(97.77)*
					12th Gear				
207.27 *(154.56)*	10855 *(48.29)*	7.16 *(11.52)*	1801	3.1	0.410 *(0.250)*	17.12 *(3.37)*	199 *(93)*	72 *(22)*	28.88 *(97.80)*
					13th Gear				
205.59 *(153.31)*	9102 *(40.49)*	8.47 *(13.63)*	1797	2.7	0.412 *(0.250)*	17.06 *(3.36)*	199 *(93)*	73 *(23)*	28.88 *(97.80)*

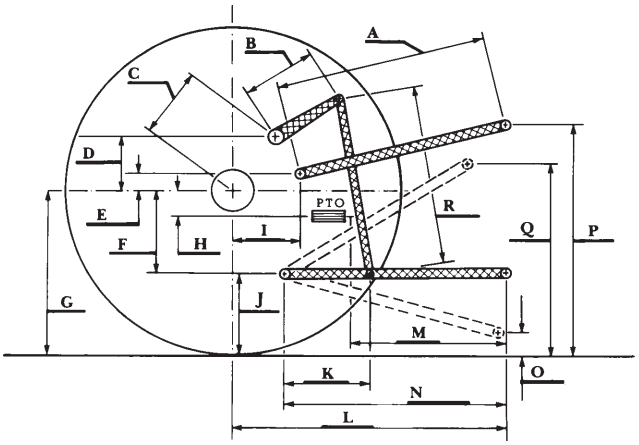
DRAWBAR PERFORMANCE
BALLASTED - FRONT DRIVE ENGAGED - 1800 RPM
MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					4th Gear				
171.65 *(128.00)*	26025 *(115.77)*	2.48 *(3.98)*	2081	11.0	0.468 *(0.284)*	15.02 *(2.96)*	178 *(81)*	44 *(7)*	29.03 *(98.31)*
					5th Gear				
185.24 *(138.13)*	24587 *(109.37)*	2.83 *(4.55)*	2057	7.9	0.441 *(0.269)*	15.91 *(3.13)*	179 *(82)*	46 *(8)*	29.03 *(98.31)*
					6th Gear				
197.04 *(146.93)*	23200 *(103.20)*	3.19 *(5.13)*	1981	6.3	0.424 *(0.258)*	16.57 *(3.27)*	181 *(83)*	48 *(9)*	29.03 *(98.31)*
					7th Gear				
206.77 *(154.18)*	22298 *(99.18)*	3.48 *(5.60)*	1850	5.5	0.409 *(0.249)*	17.17 *(3.38)*	185 *(85)*	50 *(10)*	29.03 *(98.31)*
					8th Gear				
211.27 *(157.54)*	20022 *(89.06)*	3.96 *(6.37)*	1801	4.5	0.400 *(0.243)*	17.56 *(3.46)*	185 *(85)*	52 *(11)*	29.02 *(98.27)*
					9th Gear				
212.26 *(158.28)*	17218 *(76.59)*	4.63 *(7.44)*	1805	3.4	0.399 *(0.243)*	17.59 *(3.47)*	190 *(88)*	54 *(12)*	29.02 *(98.27)*
					10th Gear				
212.00 *(158.08)*	14860 *(66.10)*	5.35 *(8.61)*	1802	2.7	0.399 *(0.243)*	17.59 *(3.47)*	194 *(90)*	56 *(13)*	29.02 *(98.27)*
					11th Gear				
209.66 *(156.34)*	12600 *(56.05)*	6.24 *(10.04)*	1801	2.2	0.404 *(0.246)*	17.38 *(3.42)*	196 *(91)*	58 *(14)*	29.01 *(98.24)*
					12th Gear				
209.29 *(156.07)*	10861 *(48.31)*	7.23 *(11.63)*	1804	1.6	0.403 *(0.245)*	17.42 *(3.43)*	191 *(88)*	60 *(16)*	29.01 *(98.24)*
					13th Gear				
207.06 *(154.40)*	9086 *(40.42)*	8.55 *(13.75)*	1804	1.2	0.412 *(0.251)*	17.04 *(3.36)*	199 *(93)*	62 *(17)*	29.01 *(98.24)*

HYDRAULIC PERFORMANCE

CATEGORY:	III	III	IVN
Quick Attach: Yes			
OECD Static test			
Lift cylinders:	2 x 90 mm	2x100 mm	2x112 mm
Maximum force exerted through whole range:	12588 lbs *(56.0 kN)*	15683 lbs *(69.8 kN)*	18326 lbs *(81.5 kN)*

	63 cc pump	85 cc pump
i) Sustained pressure at compensator cutoff:	2940 psi *(203 bar)*	2912 psi *(201 bar)*
three outlet sets combined		
ii) Pump delivery rate at minimum pressure and rated engine speed:	46.4 GPM *(175.7 l/min)*	63.6 GPM *(240.9 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	46.0 GPM *(174.1 l/min)*	63.4 GPM *(240.1 l/min)*
Delivery pressure:	2690 psi *(185 bar)*	2450 psi *(169 bar)*
Power:	72.2 HP *(53.8 kW)*	90.7 HP *(67.6 kW)*
single outlet set		
ii) Pump delivery rate at minimum pressure and rated engine speed:	40.8 GPM *(154.6 l/min)*	40.5 GPM *(153.3 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	40.4 GPM *(153.0 l/min)*	39.7 GPM *(150.3 l/min)*
Delivery pressure:	2119 psi *(146 bar)*	2097 psi *(145 bar)*
Power:	50.0 HP *(37.3 kW)*	48.6 HP *(36.2 kW)*



HITCH DIMENSIONS AS TESTED—NO LOAD

	Category III		Category IVN	
	inch	*mm*	inch	*mm*
A	29.3	*744*	27.1	*689*
B	20.5	*520*	20.5	*520*
C	20.9	*532*	20.9	*532*
D	18.9	*480*	18.9	*480*
E	12.0	*304*	12.0	*304*
F	14.4	*365*	14.4	*365*
G	35.6	*905*	37.0	*940*
H	7.9	*200*	7.9	*200*
I	21.9	*555*	21.9	*555*
J	21.2	*540*	22.6	*575*
K	28.7	*730*	28.9	*733*
L	49.3	*1252*	56.6	*1438*
*L'	53.4	*1357*	62.5	*1588*
M	22.4	*569*	29.7	*755*
N	42.6	*1081*	45.7	*1162*
O	9.0	*230*	9.0	*230*
P	43.2	*1099*	49.7	*1262*
Q	39.4	*1001*	40.7	*1035*
R	42.8	*1087*	43.5	*1106*

*L' to Quick Attach ends

JOHN DEERE 8245R DIESEL

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